



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,545	08/22/2003	Jung-Tao Liu	29250-001070/US	9178

7590 11/16/2009  
HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 8910  
Reston, VA 20195

EXAMINER
----------

PATEL, CHANDRAHAS B

ART UNIT	PAPER NUMBER
----------	--------------

2464

MAIL DATE	DELIVERY MODE
-----------	---------------

11/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,545	<b>Applicant(s)</b> LIU, JUNG-TAO	
	<b>Examiner</b> Chandrabhas Patel	<b>Art Unit</b> 2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-17, 19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-17, 19, 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see pages 8 and 9, filed 10/13/2009, with respect to claims 1 and 14 have been fully considered and are persuasive. The rejection of 7/13/2009 has been withdrawn.

### *Claim Rejections - 35 USC § 103*

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165).

**Regarding claim 1**, '373 teaches a method of transmitting control signals for uplink transmission of packet data **[Abstract]**, comprising: transmitting control signal data over a downlink control channel shared by a plurality of users **[Col. 8, lines 59-66, Fig. 4, 401, Control channel going from Base Station to Mobile Station is downlink control channel]**, the downlink control channel including timeslots **[Col. 9, lines 11-14]**, each timeslot including fields identifying one of the plurality of users **[Col. 10, lines 14-38, TFI is a field that identifies a specific user]**, each field including control signal data for the identified user for controlling uplink transmission of packet data by the identified user **[Col. 10, lines 46-50, identifies which uplink block can mobile station use for transmitting control messages]**.

However, '373 does not teach the control signal data in each field including a first indicator specifying one of an acknowledgment and a negative acknowledgment of a packet transmitted by a user and a second indicator specifying a transmit rate at which the user is to transmit in the uplink, the first indicator being a first bit value representing either the acknowledgment or the negative acknowledgement, the second indicator being a second bit value representing the transmit rate, the first and second indicators being transmitted at the same time.

'165 teaches the control signal data in each field including a first indicator specifying one of an acknowledgment and a negative acknowledgment of a packet transmitted by a user and a second indicator specifying a transmit rate at which the user is to transmit in the uplink, the first indicator being a first bit value representing either the acknowledgment or the negative acknowledgement, the second indicator being a second bit value representing the transmit rate, the first and second indicators being transmitted at the same time **[Fig. 3, A/N bit identifies ACK or NACK and RA bit identifies rate]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include acknowledgement of a packet transmitted by a user and an indicator related to a transmit rate at which the user is to transmit in the uplink and send both ACK/NAK and rate indicator simultaneously so that the rate and other parameters can be notified using downlink signaling **[Col. 1, lines 41-44]**.

**Regarding claims 2 and 15**, '373 teaches assigning each user a particular field in the downlink control channel, in advance of transmitting the downlink control channel **[Col. 9, lines 17-21]**.

**Regarding claims 3 and 16**, '373 teaches assigning each user a particular field with a given channelization code during a call setup procedure with the user **[Col. 9, lines 57-62, TBF is the unique code that is used to identify a particular slot over which communication takes place]**.

**Regarding claim 14**, '373 teaches a method for uplink transmission of packet data **[Abstract]**, comprising: decoding a field received over a downlink control channel that is shared by a plurality of users **[Col. 9, lines 5-10, Fig. 4, 401, Control channel going from Base Station to Mobile Station is downlink control channel]**, the shared downlink control channel including time slots **[Col. 9, lines 11-14]**, each time slot having a plurality of fields **[Col. 10, lines 14-38, TFI is a field that identifies a specific user]**, each field including control signal data for an identified one of the plurality of users for controlling uplink transmissions **[Col. 10, lines 46-50, identifies which uplink block can mobile station use for transmitting control messages]**; and transmitting packet data, from the identified user, in the uplink in accordance with the decoded control signal data **[Col. 10, lines 46-50]**.

However, '373 does not teach the control signal data in each field including a first indicator specifying one of an acknowledgment and a negative acknowledgment of a packet transmitted by a user and a second indicator specifying a transmit rate at which the user is to transmit in the uplink, the first indicator being a first bit value representing

either the acknowledgment or the negative acknowledgement, the second indicator being a second bit value representing the transmit rate, the first and second indicators being transmitted at the same time.

'165 teaches the control signal data in each field including a first indicator specifying one of an acknowledgment and a negative acknowledgement of a packet transmitted by a user and a second indicator specifying a transmit rate at which the user is to transmit in the uplink, the first indicator being a first bit value representing either the acknowledgment or the negative acknowledgement, the second indicator being a second bit value representing the transmit rate, the first and second indicators being transmitted at the same time **[Fig. 3, A/N bit identifies ACK or NACK and RA bit identifies rate]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include acknowledgement of a packet transmitted by a user and an indicator related to a transmit rate at which the user is to transmit in the uplink and send both ACK/NAK and rate indicator simultaneously so that the rate and other parameters can be notified using downlink signaling **[Col. 1, lines 41-44]**.

**Regarding claim 17**, '373 teaches each user is assigned a particular field in the shared downlink control channel by a base station serving the user **[Fig. 4, 401]**, in advance of receiving the shared downlink control channel **[Col. 9, lines 17-21]**, the assigned field adapted to be modified by the serving base station **[Col. 9, lines 57-62]**.

4. Claims 6, 7, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) as applied to claims 1 and 14 above, and further in view of Hunzinger et al. (USPN 7,164,654, Herein as '654).

**Regarding claims 6 and 21**, the references teach a method as discussed in rejection of claims 1 and 14.

However, the references do not teach the second indicator relates to a maximum transmit rate at which the user is to transmit in the uplink.

'654 teaches the second indicator relates to a maximum transmit rate at which the user is to transmit in the uplink **[Col. 18, lines 7-9]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a maximum transmit rate at which the user is to the transmit in the uplink so that the user can determine the maximum data rate available to it by checking the range of data rates **[Col. 18, lines 1-17]**.

**Regarding claims 7 and 22**, '654 further teaches a user adjusts transmit rate or maintains transmit rate in the uplink based on the first and second bit values of the first indicator and the second indicator **[Col. 18, lines 7-9]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust or maintain transmit rate in the uplink based on values of the first and second indicator since the user now has a choice to transmit between the range of data rates **[Col. 18, lines 1-17]**.

5. Claims 8, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) and Tiedemann, Jr. et al. (USPN 7,054,293, Herein as '293).

**Regarding claims 8 and 19**, the references teach a method as discussed in rejection of claim 1 and claim 14.

However, the references do not teach the number of users supported by the control channel is based on one or more of a signal-to-noise ratio, coding rate for the channel, and the bits size of each field.

'293 teaches the number of users supported by the control channel **[Col. 2, lines 58-61]** is based on one or more of a signal-to-noise ratio, coding rate for the channel **[Col. 2, lines 66-67 – Col. 3, lines 1-4]**, and the bits size of each field **[Col. 2, lines 58-61]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the number of users based on above discusses parameters since other parameters used to determine capacity are fixed by the system design **[Col. 2, lines 62-63]**.

6. Claims 9, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) as applied to claim 6 and 21 above, and further in view of Gardner et al. (USPN 7,146,174, Herein as '174).



**Regarding claims 9 and 23**, the references teach a method as discussed in rejection of claim 6 and claim 21.

However, the references do not teach the number of users supported by the control channel is based on a size of the second bit value of the second indicator in each field.

'174 teaches the number of users supported by the control channel is based on a size of the second bit value of the second indicator in each field **[Fig. 3, Col. 5, lines 29-32, second field indicates the transmission rate as discusses in claim 6]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the number of users based on transmission rate of the system so that acceptable quality can be given to all users communication **[Col. 5, lines 26-28]**.

7. Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) and Hunzinger et al. (USPN 7,164,654, Herein as '654) as applied to claim 6 above, and further in view of Tiedemann Jr. et al. (USPN 7,120,134, Herein as '134).

**Regarding claim 10**, the references teach a method as discussed in rejection of claim 6.

However, the references do not teach the first and second bit values are 1-bit values.

'134 teaches the first and second bit values are 1-bit values [**Col. 6, lines 53-56, Col. 9, lines 2-9**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have 1-bit values for first and second field so that it's clear what control channel meant by ACK or NAK [**Col. 9, lines 10-11**].

**Regarding claim 11**, the references teach a method as discussed in rejection of claim 6.

However, the references do not teach the first and second bit values are N-bit values, N representing a positive integer greater than 1.

'134 teaches the first and second bit values are N-bit values, N representing a positive integer greater than 1 [**Col. 9, lines 2-9**].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have N-bit values for the first and second field so that n-bit message can be block coded to increase reliability [**Col. 9, lines 10-11**].

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) and Hunzinger et al. (USPN 7,164,654, Herein as '654) as applied to claim 6 above, and further in view of Berger (USPN 6,504,821, Herein as '821).

**Regarding claim 12**, the references teach a method as discussed in rejection of claim 6.

However, the references do not teach the first bit value is an M-bit value and the second bit value is an N-bit value, N and M being different positive integers.

'821 teaches the first bit value is an M-bit value and the second bit value is an N-bit value, N and M being different positive integers **[Fig. 2, 26 corresponds to rate information field and 38 corresponds to ACK field, both have variable bits for fields]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have different values for each field since you need less bits to carry ACK information and more fields to carry the actual rate value **[Col. 4, lines 1-37]**.

9. Claims 13, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainer et al. (USPN 7,092,373, Herein as '373) in view of Toskala et al. (USPN 7,539,165, Herein as '165) and Proctor, Jr. (USPN 7,218,623, Herein as '623).

**Regarding claims 13 and 24**, the references teach a method as discussed in rejection of claim 1 and claim 14.

However, the references do not teach each user specific field is individually power controlled based on monitoring the first and second indicators in the user specific field.

'623 teaches each user specific field is individually power controlled based on monitoring the first and second indicators in the user specific field **[Fig. 3, 312]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to individually power control each field so that each device can be

individually controlled based on the device's environmental conditions [**Col. 12, lines 35-47**].

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is (571)270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/  
Supervisory Patent Examiner, Art  
Unit 2464

Application/Control Number:  
10/645,545  
Art Unit: 2464

Page 12

/Chandrabhas Patel/  
Examiner, Art Unit 2464